

REMARKS

The Office Action dated November 09, 2004, as well as the Advisory Action mailed on April 26, 2005, have been reviewed and the Examiner's comments carefully considered. Prior to this paper, claims 1, 3-9, 11-13, 15-28, and 30-45 were pending. By this paper, Applicant adds claims 46-54 and cancels claims 4, 27, 28, 35, 40 and 41. Therefore, claims 1, 3, 5-9, 11-13, 15-27, 30-34, 36-39 and 42-54 are now pending.

Applicant respectfully submits that the present application is in condition for allowance for the reasons that follow.

Claim Rejections Under 35 U.S.C. §103(a)

In the last Office Action, and by implication, in the Advisory Action, claims 1, 3-6, 8-9, 11-13, 15-19, 21-26, 33-34, 38-40 and 42-45 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fantone (U.S. Patent Number 4,786,154). Claim 7 is rejected under the same statute in view of the combination of Fantone with Shioda (U.S. Patent No. 6,081,371). Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Fantone in view of Grund (U.S. Patent No. 6,217,519). Claims 27, 28, 30-32, 35-37 and 41 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fantone in view of Martino (U.S. Patent No. 5,307,202).

As an initial matter, Applicant notes that the cancellation of certain claims render moot some of these rejections.

Applicant further respectfully submits that the above amendments to each of the independent claims also render moot these rejections, as will now be discussed.

The Cited References Do Not Suggest All Claim Recitations

Claims 1 and 22: Claim 1 has been amended to include “a computing unit adapted for at least one of global, zone-by-zone and pixel-by-pixel analysis of at least one of specimen brightness and color,” along with “a controller in communication with the image measurement unit, wherein the controller is adapted to control at least one of the brightness and color of image signals generated by the superimposition apparatus, wherein the control is carried out on at least one of a zone-by-zone and a pixel-by-pixel basis.”

Fantone does not render obvious claim 1. Fantone does not teach or suggest a controller in communication with an image measurement unit, wherein control of brightness or color of an image signal generated by a superimposition apparatus is carried out on either a zone-by-zone or a pixel-by-pixel basis. Method claim 22 is not rendered obvious by Fantone for at least these same reasons.

Claims 33 and 34: Claim 33, as amended, recites a superimposition apparatus that generates an image that is superimposed on a specimen image, wherein “the generated image is an image *including features not present in the specimen.*”

In an exemplary embodiment of the invention of claim 33, while “viewing the situs through the microscope the surgeon can, for example, perceive the location and size of the target specimen, typically by *overlaying or superimposing additional data (e.g., virtual-reality specimen contours) onto the microscopic intermediate image* by means of a display, an optical system, and a superimposing reflector” (specification, paragraph 0003), with the brightness of this overlaid/superimposed data image being controlled as recited. The virtual reality specimen contours are features not present in the specimen.

In contrast, all displayed features of any alleged superimposed image in Fantone’s device comes from the specimen. They may be (assumed *arguendo*) color/brightness enhanced, but that is all. No new features are added in any superimposed image. Claim 33 is

thus allowable. Method claim 34 is likewise not obvious in view of Fantone for at least the same reasons.

Claims 46 and 47: Claim 46, as amended, recites “a controller configured to adjust brightness of a plurality of regions of the image generated by the superimposition apparatus in response to measurements by the image measurement unit of the brightness of corresponding regions of the specimen image, wherein the *controller does not output the superimposed image.*” Claim 47 recites that a control signal “outputted by the controller *does not include an image of the specimen or an image of a portion of the specimen.*” An exemplary embodiment of the invention of claims 46 and 47 may be seen in Fig. 2, where controller 31 provides a control output 34 to control the brightness of the image inserted by superimposition apparatus 3.

Any controller present in Fantone outputs the superimposed image/contains an image of at least a portion of the specimen. Thus, claims 46 and 47 are not obvious in view of Fantone.

Dependent Claims: The claims that depend from the independent claims are allowable for at least the above mentioned reasons.

Lack of Suggestion or Motivation to Modify or Combine the References

MPEP § 2144.05(III), entitled Rebuttal Of *Prima Facie* Case Of Obviousness, states that a “*prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention.” (MPEP § 2144.05(III), second paragraph, emphasis added, citations omitted.)

Fantone teaches away from many of the pending claims. As is repeatedly stated in Fantone and in the Office Action, Fantone teaches image enhancement. (Fantone’s title is

“Enhanced-Image Operating Microscope.”) Webster’s dictionary defines the word enhance as “to add or contribute to, improve, increase, intensify.” Such a definition is consistent with every specific teaching associated with varying an image parameter of Fantone (e.g., col. 3, lines 18-20: “increasing the gain of a portion of specified frequency . . . can be employed, for example, to enhance a weak fluorescence of the object;” col. 3, lines 33-35: “To produce the enhanced image, one then increases the gain applied to the pixels,” col. 3, lines 54-55: “Edge enhancement thus may also be performed by increasing the high-frequency gain.” Fantone never teaches or suggests decreasing an image parameter. In Fantone, if a region of the specimen is dull, the device of Fantone would increase the brightness of the superimposed image by a value to make the dull image “bright enough.” Fantone teaches a device that operates in an opposite manner as the invention of claims 46-52. Fantone teaches away from the present invention.

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MPEP § 2143.01 states that “the prior art *must* suggest the desirability of the invention.” (MPEP § 2143.01, subsection 1, emphasis added.) The Office Action asserts that it would have been obvious to “make any adjustment including” those according to claim 1 “to provide any desired enhancement of various features of interest on the object.” (Office Action, sentence spanning pages 3-4, emphasis added.) Assuming that this is correct, no evidence or rationale has been put forward that the adjustment regime of claim 1 would have been desirable. Merely stating that an applicant’s invention is desirable is not sufficient motivation to modify a reference to achieve an applicant’s invention. Such rationale is circular and relies on impermissible hindsight. Indeed, under such a rationale, it would be obvious to modify any reference to achieve any alleged desired result. Such a standard would eviscerate the first requirement of MPEP § 2143. A *prima facie* case of obvious has thus not been met for yet another reason.

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MPEP § 2143.01, subsection 6 states that “the proposed modification cannot change the principle of operation of a reference – If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie*

obvious. *In re Ratti*, 270 F.2d 810 (CCPA 1959).” In *Ratti*, the CCPA held that the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in the primary reference.” This substantial redesign would have resulted in changing a rigid seal to a resilient seal. Thus, a reference cannot be modified to render an invention obvious if the modification changes a principle of operation of the reference.

With the above in mind, it is respectfully submitted that since the teachings of Fantone rely on increasing a parameter of an image, modifying Fantone to decrease the brightness of a region of an overlaid image in response to a determination that a respective region of the underlying image is dull would change the principle of operation of Fantone. Since modifying Fantone to decrease the brightness of an overlaid image changes the principle of operation of Fantone, just as changing the rigid seal to a resilient seal was found to change the principle of operation in *Ratti*, “the teachings of [Fantone] are not sufficient to render at least claims 46-53 *prima facie* obvious.” (MPEP § 2143.01, emphasis added.)

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Fantone also teaches away from the invention of claims 46-52. In regard to these claims, as noted above, in Fantone, if a region of the specimen is dull, the device of Fantone would increase the brightness of the superimposed image by a value to make the dull image “bright enough.” However, if a region of Fantone is not dull or less dull, the brightness of any superimposed image would not be increased by the same factor, *if even increased at all*, since the goal of Fantone is to simply ensure that a user can see/identify otherwise hidden portions of a specimen. Fantone does not concern himself with portions of the specimen that may clearly be seen. Thus, Fantone teaches away from device that maintains substantially constant ratios of each of the brightnesses of the plurality of regions of the image signal to each of the brightnesses of the corresponding regions of the specimen image, as is required by some of the claims.

Conclusion

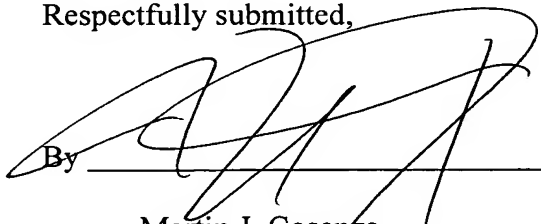
Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Fineman is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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By 
Martin J. Cosenza
Attorney for Applicant
Registration No. 48,892

FOLEY & LARDNER LLP
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5143
Telephone: (202) 295-4747
Facsimile: (202) 672-5399